Phoenix Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
547	CHANDLER	9	3	0	0	0	44,500	74,124	118,624
548	CHANDLER	1	0	0	0	0	44,500	5,468	49,968
549	CHANDLER	11	0	0	0	0	44,500	24,204	68,704
550	CHANDLER	1	0	0	0	0	44,500	5,468	49,968
551	CHANDLER	2	0	0	0	0	44,500	5,468	49,968
552	CHANDLER	2	0	0	0	0	44,500	5,468	49,968
553	CHANDLER	1	0	0	0	0	44,500	5,468	49,968
554	CHANDLER	3	0	0	0	0	44,500	5,468	49,968
555	CHANDLER	1	0	0	0	0	44,500	5,468	49,968
556	CHANDLER	1	0	0	0	0	44,500	5,468	49,968
557	CHANDLER	1	0	0	0	0	44,500	5,468	49,968
558	CHANDLER	1	0	0	0	0	44,500	5,468	49,968
559	CHANDLER	3	0	0	0	0	44,500	5,468	49,968
560	SACATON	1	0	0	0	0	44,500	5,468	49,968
561	ELOY	2	0	0	0	0	44,500	5,468	49,968
				Sub-Totals			**$24,964,500**	**$5,703,867**	

# in this Study	**3101**	**Sum of Total Cost**	**$30,668,367**
# in this Band	**561**	**Average of Total Cost**	**$54,667**
		% of Addresses in this Band	**18.09%**

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
1	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
2	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
3	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
4	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
5	PHOENIX	8	0	0	0	0	63,000	16,136	79,136
6	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
7	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
8	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
9	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
10	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
11	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
12	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
13	PHOENIX	8	1	0	0	0	63,000	45,996	108,996
14	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
15	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
16	PHOENIX	7	0	0	0	0	63,000	16,136	79,136
17	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
18	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
19	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
20	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
21	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
22	CAVE CREEK	1	0	0	0	0	63,000	5,468	68,468
23	PEORIA	1	0	0	0	0	63,000	5,468	68,468
24	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
25	PEORIA	1	0	0	0	0	63,000	5,468	68,468
26	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
27	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
28	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
29	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
30	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
31	PEORIA	1	0	0	0	0	63,000	5,468	68,468
32	GLENDALE	3	0	0	0	0	63,000	5,468	68,468
33	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
34	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
35	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
36	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
37	PEORIA	3	0	0	0	0	63,000	5,468	68,468
38	SCOTTSDA	1	0	0	0	0	63,000	5,468	68,468
39	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
40	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
41	SCOTTSDA	1	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
42	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
43	SCOTTSDA	1	0	0	0	0	63,000	5,468	68,468
44	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
45	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
46	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
47	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
48	PHOENIX	6	0	0	0	0	63,000	16,136	79,136
49	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
50	SCOTTSDALE	8	0	0	0	0	63,000	16,136	79,136
51	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
52	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
53	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
54	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
55	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
56	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
57	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
58	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
59	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
60	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
61	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
62	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
63	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
64	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
65	PHOENIX	39	0	0	0	0	63,000	47,794	110,794
66	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
67	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
68	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
69	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
70	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
71	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
72	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
73	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
74	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
75	SCOTTSDALE	4	0	0	0	0	63,000	8,068	71,068
76	PEORIA	1	0	0	0	0	63,000	5,468	68,468
77	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
78	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
79	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
80	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
81	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
82	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
83	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
84	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
85	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
86	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
87	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
88	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
89	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
90	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
91	PHEONIX	7	0	0	0	0	63,000	16,136	79,136
92	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
93	SCOTTSDALE	6	0	0	0	0	63,000	16,136	79,136
94	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
95	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
96	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
97	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
98	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
99	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
100	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
101	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
102	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
103	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
104	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
105	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
106	PHOENIX	10	0	0	0	0	63,000	24,204	87,204
107	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
108	PEORIA	1	0	0	0	0	63,000	5,468	68,468
109	PEORIA	1	0	0	0	0	63,000	5,468	68,468
110	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
111	SUN CITY	1	0	0	0	0	63,000	5,468	68,468
112	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
113	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
114	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
115	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
116	SUN CITY	1	0	0	0	0	63,000	5,468	68,468
117	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
118	PHOENIX	38	2	0	0	0	63,000	74,873	137,873
119	SUN CITY	2	0	0	0	0	63,000	5,468	68,468
120	SUN CITY	2	0	0	0	0	63,000	5,468	68,468
121	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
122	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
123	PHOENIX	2	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
124	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
125	SCOTTSDALE	4	0	0	0	0	63,000	8,068	71,068
126	SCOTTSDALE	2	0	0	0	0	63,000	5,468	68,468
127	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
128	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
129	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
130	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
131	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
132	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
133	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
134	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
135	SCOTTSDALE	4	0	0	0	0	63,000	8,068	71,068
136	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
137	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
138	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
139	SCOTTSDALE	0	1	0	0	0	63,000	44,520	107,520
140	SCOTTSDALE	1	4	0	0	0	63,000	60,150	123,150
141	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
142	PHOENIX	14	0	0	0	0	63,000	23,192	86,192
143	PHOENIX	11	0	0	0	0	63,000	24,204	87,204
144	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
145	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
146	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
147	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
148	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
149	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
150	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
151	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
152	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
153	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
154	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
155	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
156	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
157	SCOTTSDA	3	0	0	0	0	63,000	5,468	68,468
158	PEORIA	3	0	0	0	0	63,000	5,468	68,468
159	PARADISE LLEY	1	0	0	0	0	63,000	5,468	68,468
160	PARADISE VALLEY	2	0	0	0	0	63,000	5,468	68,468
161	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
162	PEORIA	1	0	0	0	0	63,000	5,468	68,468
163	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
164	GLENDALE	1	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
165	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
166	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
167	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
168	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
169	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
170	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
171	PARADISE VALL	1	0	0	0	0	63,000	5,468	68,468
172	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
173	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
174	GLENDALE	9	1	0	0	0	63,000	46,734	109,734
175	SCOTTSDALE	6	0	0	0	0	63,000	16,136	79,136
176	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
177	GLENDALE	6	0	0	0	0	63,000	16,136	79,136
178	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
179	GLENDALE	4	0	0	0	0	63,000	8,068	71,068
180	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
181	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
182	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
183	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
184	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
185	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
186	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
187	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
188	QUEEN CREEK	1	0	0	0	0	63,000	5,468	68,468
189	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
190	GLENDALE	3	0	0	0	0	63,000	5,468	68,468
191	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
192	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
193	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
194	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
195	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
196	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
197	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
198	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
199	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
200	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
201	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
202	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
203	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
204	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
205	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
206	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
207	SCOTTSDALE	10	0	0	0	0	63,000	24,204	87,204
208	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
209	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
210	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
211	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
212	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
213	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
214	GLENDALE	2	0	0	0	0	63,000	5,468	68,468
215	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
216	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
217	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
218	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
219	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
220	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
221	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
222	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
223	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
224	PHOENIX	10	0	0	0	0	63,000	24,204	87,204
225	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
226	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
227	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
228	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
229	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
230	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
231	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
232	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
233	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
234	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
235	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
236	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
237	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
238	SCOTTSDALE	3	0	0	0	0	63,000	5,468	68,468
239	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
240	SCOTTSDALE	5	0	0	0	0	63,000	16,136	79,136
241	MESA	1	0	0	0	0	63,000	5,468	68,468
242	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
243	AVONDALE	1	0	0	0	0	63,000	5,468	68,468
244	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
245	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
246	PHOENIX	1	0	0	0	0	63,000	5,468	68,468

Phoenix Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
247	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
248	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
249	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
250	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
251	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
252	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
253	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
254	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
255	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
256	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
257	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
258	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
259	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
260	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
261	MESA	1	0	0	0	0	63,000	5,468	68,468
262	MESA	1	0	0	0	0	63,000	5,468	68,468
263	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
264	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
265	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
266	MESA	2	0	0	0	0	63,000	5,468	68,468
267	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
268	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
269	MESA	1	0	0	0	0	63,000	5,468	68,468
270	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
271	MESA	1	0	0	0	0	63,000	5,468	68,468
272	TEMPE	3	0	0	0	0	63,000	5,468	68,468
273	MESA	3	0	0	0	0	63,000	5,468	68,468
274	MESA	1	0	0	0	0	63,000	5,468	68,468
275	SCOTTSDALE	1	0	0	0	0	63,000	5,468	68,468
276	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
277	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
278	MESA	2	0	0	0	0	63,000	5,468	68,468
279	MESA	3	0	0	0	0	63,000	5,468	68,468
280	GILBERT	1	0	0	0	0	63,000	5,468	68,468
281	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
282	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
283	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
284	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
285	TOLLESON	3	0	0	0	0	63,000	5,468	68,468
286	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
287	MESA	1	0	0	0	0	63,000	5,468	68,468

Phoenix Fiber Study
Cost Model - Competitive Access Providers
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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
288	MESA	1	0	0	0	0	63,000	5,468	68,468
289	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
290	PHOENIX	8	0	0	0	0	63,000	16,136	79,136
291	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
292	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
293	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
294	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
295	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
296	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
297	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
298	MESA	1	0	0	0	0	63,000	5,468	68,468
299	MESA	1	0	0	0	0	63,000	5,468	68,468
300	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
301	HIGLEY	1	0	0	0	0	63,000	5,468	68,468
302	MESA	2	0	0	0	0	63,000	5,468	68,468
303	MESA	7	1	0	0	0	63,000	45,996	108,996
304	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
305	MESA	3	0	0	0	0	63,000	5,468	68,468
306	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
307	MESA	1	0	0	0	0	63,000	5,468	68,468
308	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
309	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
310	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
311	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
312	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
313	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
314	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
315	MESA	1	0	0	0	0	63,000	5,468	68,468
316	MESA	1	0	0	0	0	63,000	5,468	68,468
317	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
318	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
319	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
320	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
321	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
322	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
323	PHOENIX	3	0	0	0	0	63,000	5,468	68,468
324	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
325	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
326	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
327	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
328	PHOENIX	1	0	0	0	0	63,000	5,468	68,468

Phoenix Fiber Study
Cost Model - Competitive Access Providers
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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
329	PHOENIX	5	0	0	0	0	63,000	16,136	79,136
330	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
331	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
332	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
333	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
334	PHOENIX	0	0	1	0	0	63,000	41,820	104,820
335	PHOENIX	171	19	0	0	0	63,000	213,345	276,345
336	PHOENIX	22	0	0	0	0	63,000	24,602	87,602
337	PHOENIX	0	0	0	0	1	63,000	62,021	125,021
338	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
339	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
340	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
341	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
342	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
343	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
344	MESA	1	0	0	0	0	63,000	5,468	68,468
345	TEMPE	2	0	0	0	0	63,000	5,468	68,468
346	TEMPE	1	0	0	0	0	63,000	5,468	68,468
347	TEMPE	1	0	0	0	0	63,000	5,468	68,468
348	TEMPE	2	0	0	0	0	63,000	5,468	68,468
349	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
350	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
351	TEMPE	3	0	0	0	0	63,000	5,468	68,468
352	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
353	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
354	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
355	MESA	2	0	0	0	0	63,000	5,468	68,468
356	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
357	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
358	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
359	MESA	1	0	0	0	0	63,000	5,468	68,468
360	MESA	1	0	0	0	0	63,000	5,468	68,468
361	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
362	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
363	MESA	1	0	0	0	0	63,000	5,468	68,468
364	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
365	GLENDALE	1	0	0	0	0	63,000	5,468	68,468
366	MESA	2	0	0	0	0	63,000	5,468	68,468
367	TOLLESON	1	0	0	0	0	63,000	5,468	68,468
368	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
369	GILBERT	5	0	0	0	0	63,000	16,136	79,136

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
370	MESA	1	0	0	0	0	63,000	5,468	68,468
371	MESA	1	0	0	0	0	63,000	5,468	68,468
372	MESA	1	0	0	0	0	63,000	5,468	68,468
373	MESA	1	0	0	0	0	63,000	5,468	68,468
374	PHOENIX	4	0	0	0	0	63,000	8,068	71,068
375	MESA	4	0	0	0	0	63,000	8,068	71,068
376	MESA	2	0	0	0	0	63,000	5,468	68,468
377	TEMPE	1	0	0	0	0	63,000	5,468	68,468
378	MESA	1	0	0	0	0	63,000	5,468	68,468
379		1	0	0	0	0	63,000	5,468	68,468
380	MESA	2	0	0	0	0	63,000	5,468	68,468
381		1	0	0	0	0	63,000	5,468	68,468
382	MESA	4	0	0	0	0	63,000	8,068	71,068
383		1	0	0	0	0	63,000	5,468	68,468
384	MESA	1	0	0	0	0	63,000	5,468	68,468
385	MESA	1	0	0	0	0	63,000	5,468	68,468
386	MESA	1	0	0	0	0	63,000	5,468	68,468
387	MESA	3	0	0	0	0	63,000	5,468	68,468
388	TEMPE	3	0	0	0	0	63,000	5,468	68,468
389	GILBERT	4	0	0	0	0	63,000	8,068	71,068
390	PHOENIX	2	0	0	0	0	63,000	5,468	68,468
391	TEMPE	8	0	0	0	0	63,000	16,136	79,136
392	GILBERT	2	0	0	0	0	63,000	5,468	68,468
393	TEMPE	2	0	0	0	0	63,000	5,468	68,468
394	TEMPE	5	2	0	0	0	63,000	48,696	111,696
395	GILBERT	1	0	0	0	0	63,000	5,468	68,468
396	GILBERT	1	0	0	0	0	63,000	5,468	68,468
397	TEMPE	2	0	0	0	0	63,000	5,468	68,468
398	GILBERT	1	0	0	0	0	63,000	5,468	68,468
399	TEMPE	7	0	0	0	0	63,000	16,136	79,136
400	TEMPE	3	0	0	0	0	63,000	5,468	68,468
401	GILBERT	1	0	0	0	0	63,000	5,468	68,468
402	GILBERT	1	0	0	0	0	63,000	5,468	68,468
403	GILBERT	3	0	0	0	0	63,000	5,468	68,468
404	GILBERT	1	0	0	0	0	63,000	5,468	68,468
405	TEMPE	3	0	0	0	0	63,000	5,468	68,468
406	TEMPE	4	0	0	0	0	63,000	8,068	71,068
407	TEMPE	1	0	0	0	0	63,000	5,468	68,468
408	TEMPE	2	0	0	0	0	63,000	5,468	68,468
409	GILBERT	4	0	0	0	0	63,000	8,068	71,068
410	GILBERT	1	2	0	0	0	63,000	47,958	110,958

Phoenix Fiber Study
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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
411	MESA	1	0	0	0	0	63,000	5,468	68,468
412	MESA	4	0	0	0	0	63,000	8,068	71,068
413	MESA	1	0	0	0	0	63,000	5,468	68,468
414	MESA	4	0	0	0	0	63,000	8,068	71,068
415	GILBERT	4	0	0	0	0	63,000	8,068	71,068
416	PHOENIX	9	0	0	0	0	63,000	24,204	87,204
417	TEMPE	1	0	0	0	0	63,000	5,468	68,468
418	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
419	TEMPE	1	0	0	0	0	63,000	5,468	68,468
420	TEMPE	1	0	0	0	0	63,000	5,468	68,468
421	GILBERT	3	0	0	0	0	63,000	5,468	68,468
422	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
423	CHANDLER	25	1	0	0	0	63,000	49,686	112,686
424	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
425	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
426	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
427	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
428	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
429	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
430	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
431	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
432	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
433	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
434	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
435	PHOENIX	1	0	0	0	0	63,000	5,468	68,468
436	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
437	CHANDLER	21	1	0	0	0	63,000	48,948	111,948
438	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
439	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
440	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
441	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
442	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
443	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
444	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
445	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
446	CHANDLER	24	1	0	0	0	63,000	48,948	111,948
447	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
448	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
449	CHANDLER	3	0	0	0	0	63,000	5,468	68,468
450	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
451	CHANDLER	1	0	0	0	0	63,000	5,468	68,468

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DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE

KEY	CITY	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
452	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
453	CHANDLER	2	0	0	0	0	63,000	5,468	68,468
454	CHANDLER	1	0	0	0	0	63,000	5,468	68,468
				Sub-Totals			**$28,602,000**	**$3,689,231**	
	# in this Study	**3101**						**Sum of Total Cost**	**$32,291,231**
	# in this Band	**454**						**Average of Total Cost**	**$71,126**
								% of Addresses in this Band	**14.64%**

PROFILE

POWER ENGINEERS, INC.

PROFILE

POWER ENGINEERS, INC.

POWER Engineers, Inc. (POWER) is a consulting engineering firm headquartered in Idaho with offices located throughout the United States and overseas. Since its beginning 20 years ago, POWER has grown from a staff of three to a firm which now employs over 400. Through growth and diversification, POWER has become a multidisciplinary consulting firm specializing in many technical areas. POWER's full-service capabilities provide integrated services from preliminary planning stages through construction and close-out. Its professional staff includes engineers in the following disciplines:

- Project Management
- **Communications**
- **GIS / GPS**
- Mechanical
- Electrical
- Geotechnical
- Controls
- Combustion
- SCADA
- Structural / Architectural
- Civil
- Chemical
- Petroleum
- Mining
- Environmental
- Thermography
- **Training Development / Delivery**

Staff and/or field office locations include:

- Phoenix, AZ
- Denver, CO
- Atlanta, GA
- Boise, ID
- Hailey, ID
- St. Louis, MO
- Mindanao, The Philippines
- Portland, OR
- Austin, TX

POWER has been recognized as one of the top ten engineering consulting firms in the country by trade publications, i.e., "*Consulting - Specifying Engineer*", etc.

POWER Engineers, Inc.

ICS DIVISION

LINES OF BUSINESS

* TELEPHONY
  - Traditional Outside Plant Planning & Design (Copper, Fiber, SLE, etc.)
  - Data Base Administration
  - Records Management

* BROADBAND PLANNING & DESIGN
  - Video & Data Transport Systems
  - Energy Management Systems (Distribution & Substation)

* RF / CELLULAR / PCS
  - Design
  - Site Acquisition

* SYSTEMS DESIGN
  - Inside Plant Design & Engineering
  - LAN/WAN Networks
  - SONET

* GIS / GPS SERVICES
  - Conversion
  - Analysis
  - Application Development

* TRAINING DEVELOPMENT & DELIVERY
  - Instructional Design (Job Studies, Needs Assessment, etc.)
  - Interactive Multimedia
  - Computer Based Training (CBT)
  - Electronic Support Systems
  - OSP Engineering Training (Instructors)
  - Construction / I & M Training (Instructors)

* ETC.

POWER Engineers, Inc.

ICS DIVISION

REPRESENTATIVE CLIENT LIST

- AT & T
- CENTRAL & SOUTH WEST UTILITIES
- CITIZENS TELEPHONE (& UTILITY)
- COX COMMUNICATIONS
- CUSTER TELEPHONE (INDEPENDENT)
- FIBERLINK
- JONES LIGHTWAVE
- LUCENT TECHNOLOGIES
- MCI
- MICRON
- R & L ELECTRONICS
- TCI
- U S GOVERNMENT (GEOLOGICAL SURVEY)
- U S SPRINT COMMUNICATIONS CO.
- U S WEST COMMUNICATIONS

IX.

QUALIFICATIONS OF POWER ENGINEERS, INC.

POWER Engineers, Inc. is a company qualified to complete engineering, and related, work in the communications environment. The communications engineering division is also supported with expertise in all the professional engineering disciplines and a complete, state of the art GIS operation.

The following pages describe POWER in terms of a brief profile, communications lines of business, and a representative client list.

Affidavit

BE IT KNOWN, that Nickie L. R. Duff, the Undersigned, being of legal age, do hereby depose and say under oath as outlined in the attached document, entitled, "Phoenix Cost Study and Model", which is annexed and incorporated herein:

WITNESS my hand under the penalties of perjury this 13th day of August, 1998.

Nickie L R Duff
Signed

Signed

Signed

Signed

Before me this day personally appeared Nickie L. R. Duff, known to me to be the person described in and who executed this agreement.

WITNESS my hand and official seal at Boise in Ada County in the State of Idaho this 13th day of August, 1998.

Signature Sandra M. Galucia
Notary Public for Idaho
My commission expires 3/7/2000

ATTACHMENT C

ECONOMIC EVALUATION OF HIGH CAPACITY COMPETITION IN PHOENIX

Alfred E. Kahn and Timothy J. Tardiff

EXECUTIVE SUMMARY

U S WEST Communications is requesting, under Section 10 of the Telecommunications Act of 1996, that the Federal Communications Commission forebear from regulating it as a dominant carrier in its sale of high capacity services in the Phoenix metropolitan area. In support of its Petition the Company has asked us to assess its market power in the offer of these services in that area. In performing this analysis, we rely on information about that market obtained from studies performed by others (Quality Strategies and POWER Engineers), on data provided by the Company, and on our own primary and secondary research on this and related markets.

Following the approach the FCC has previously used to assess market power for other services, we conclude that the market for high capacity services in the Phoenix area fully exhibits the indicia of competition that the Commission has prescribed. In particular, (1) U S WEST has a diminishing market share—indeed, it serves only 30 percent of the retail market—and is barely providing one-half of the facilities that serve new demand; (2) customers are highly sensitive to price and other service characteristics; (3) U S WEST's competitors have the ability to expand their capacity sufficiently to take over a major share of the market currently served by U S WEST and there are minimal barriers to entry; and (4) U S WEST's size does not confer on it an insurmountable competitive advantage.

August 14, 1998

U S WEST's lack of market power signifies that competition itself, without dominant firm regulation, is sufficient to limit its ability to impose anticompetitive prices and other conditions of service. In light of these developments, the costs of maintaining dominant firm regulation in this market clearly exceed whatever benefits continued regulation could possibly confer.

I. INTRODUCTION

U S WEST Communications is requesting, under Section 10 of the Telecommunications Act of 1996, that the Federal Communications Commission forebear from regulating it as a dominant carrier in its sale of high capacity services in the Phoenix metropolitan area. In seeking nondominant status for these services, the Company argues that competitive entry, along with the competition to which it is already subject, is sufficient to constrain its ability to charge prices above competitive levels and, therefore, the costs of continued dominant carrier regulation far outweigh the benefits.

U S WEST has asked us to assess its market power in the offer of these services in Phoenix. In performing this analysis, we rely on information about that market obtained from studies performed by others (Quality Strategies and POWER Engineers), on data provided by the Company, and our own primary and secondary research on this and related markets. We follow the framework the FCC has used in determining nondominant status in other situations.[1] We conclude that competition in this particular market is sufficiently strong to constrain U S

WEST's ability to control prices and other terms and conditions of service, and that continuing dominant-firm regulation of its high capacity services would be anti-competitive and injurious to consumers.

II. THE FCC'S APPROACH TO MARKET POWER ASSESSMENT

The FCC employs standard economic concepts in its assessment of a firm's market power.[2] It first defines the relevant product and geographic market, taking into account both demand and supply substitution. It then determines whether a firm currently regulated as a dominant carrier still possesses monopoly power within that market, by examining four specific measures:[3] (1) market share, (2) demand elasticity, (3) supply elasticity and (4) the cost structure, size and resources of the putatively dominant firm. We proceed to analyze each of these in turn.

A. Market Definition

Services provided to customers with usage sufficiently great to be economically served with high capacity facilities[4] define the relevant product market.[5] These customers would be

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[1] See, for example, *Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, October 12, 1995 ("AT&T nondominance order") and *Policies and Rules for Alternative Incentive Based Regulation of Comsat Corporation*, IB Docket No. 98-60, April 24, 1998.

[2] Cf., e.g., the methods employed by the antitrust agencies for defining markets when analyzing proposed mergers. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines*, April 2, 1992.

[3] These measures are similar to those described in W.M. Landes and R.A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review*, 1981.

[4] These include DS-1 or higher capacity facilities.